

**WHAT IS CLAIMED IS:**

1. A decorative floor covering downwardly comprising a surface layer,  
and a polyvinyl chloride resin substrate layer, wherein the surface layer  
5 comprises a polyethylene terephthalate film layer.

2. A decorative floor covering in accordance with claim 1, wherein the  
polyethylene terephthalate film layer is a film in which a primer selected from  
the group consisting of polyvinyl acetate based, polyurethane acrylate based,  
and ethylene vinyl acetate based primers is coated to a film thickness of from  
10 0.1 to 10  $\mu\text{m}$  on top and bottom sides of the polyethylene terephthalate film  
layer.

3. A decorative floor covering in accordance with claim 1, wherein a  
thickness of the polyethylene terephthalate film layer is from 10 to 100  $\mu\text{m}$ .

4. A decorative floor covering in accordance with claim 1, wherein the  
15 polyvinyl chloride resin substrate layer is a non-foamed polyvinyl chloride  
sheet comprising 100 weight parts of polyvinyl chloride resin, 50 to 400  
weight parts of one or more inorganic fillers selected from the group  
consisting of calcium carbonate, talc, wollastonite, and silica, or 5 to 30  
weight parts of one or more metallic powders selected from the group  
20 consisting of aluminum, copper, and iron as fillers.

5. A decorative floor covering in accordance with claim 4, wherein the  
polyvinyl chloride resin substrate layer 10 is a non-foamed polyvinyl chloride  
sheet manufactured by kneading a polyvinyl chloride resin composition  
comprising 100 weight parts of polyvinyl chloride resin, a plasticizer of 30 to

50 weight parts of dioctyl phthalate, heat resistant stabilizers of 3 to 5 weight parts of barium-zinc based compound and 3 to 5 weight parts of epoxy compound, and fillers of 50 to 400 weight parts of calcium carbonate ( $\text{CaCO}_3$ ) and 3 to 5 weight parts of pigment in a rolling mill having a  
5 temperature of 160 to 190 °C, and pressure rolling it to a thickness of 0.8 to 1.3 mm.

6. A decorative floor covering in accordance with claim 1, wherein the polyvinyl chloride resin substrate layer is comprised of glass fiber scrim, or woven or nonwoven glass fiber.

10 7. A decorative floor covering in accordance with claim 1 further comprising a light back layer beneath the substrate layer.

8. A decorative floor covering in accordance with claim 7, wherein the light back layer comprises one or more layers selected from the group consisting of a cork balance layer, a wooden powder balance layer, and a  
15 fiber layer.

9. A decorative floor covering in accordance with claim 8, wherein the cork balance layer is a sheet which is cut to a thickness of 1.0 to 2.0 mm with a slicing machine after a cork layer of a natural tree is peeled off, pulverized to a particle size of 5 to 10 meshes, put into a large cylinder together with  
20 adhesive, and bonded by applying pressure.

10. A decorative floor covering in accordance with claim 8, wherein the wooden powder balance layer is a sheet which is rolled to a thickness of 0.8 to 1.0 mm using a two sets of pressure rolls after adding 100 to 150 weight parts of wooden powder having a particle size of 200 to 300 meshes,

3 to 5 weight parts of heat resistant stabilizer barium-zinc based compound, 1 to 3 weight parts of internal antiadditive stearic acid, 30 to 50 weight parts of plasticizer dioctyl phthalate, and 3 to 5 weight parts of pigment to 100 weight parts of polyvinyl chloride resin, and kneading all the components together.

11. A decorative floor covering in accordance with claim 8, wherein the fiber layer is selected from the group consisting of woven or unwoven polyester, woven or unwoven polypropylene, and woven or unwoven glass fiber, the woven thickness being from 10s x 10s to 25s x 15s, and the density being from 20 x 20 to 30 x 30 roll/inch.

12. A decorative floor covering in accordance with claim 1 comprising:

- i ) a surface treated layer;
- ii) a polyethylene terephthalate film layer;
- 15 iii) a polyvinyl chloride resin intermediate layer;
- iv) a polyvinyl chloride resin substrate layer;
- v ) an adhesive layer; and
- vi) a light back layer.

13. A decorative floor covering in accordance with claim 12, wherein the surface treated layer of i ) is a layer in which a surface treated layer composition comprising a resin selected from the group consisting of urethane acrylate, silicone acrylate, and epoxy acrylate is coated on the polyethylene terephthalate film layer, and cured with ultraviolet rays.

14. A decorative floor covering in accordance with claim 13, wherein the surface treated layer composition further comprises an acryl based or urethane based bead having a particle size of 5 to 20  $\mu\text{m}$ .

15. A decorative floor covering in accordance with claim 12, wherein  
5 the polyvinyl chloride resin intermediate layer of ii) is a sheet having a thickness of 0.1 to 1 mm manufactured by pressure rolling in a calender a polyvinyl chloride resin composition comprising 100 parts of polyvinyl chloride resin, 25 to 50 weight parts of dioctyl phthalate, 50 to 150 weight parts of calcium carbonate, 3 to 5 weight parts of titanium oxide, and 2 to 5 weight  
10 parts of heat stabilizer.

16. A decorative floor covering in accordance with claim 12, wherein the total thickness of the i) surface treated layer, ii) polyethylene terephthalate film layer, iii) polyvinyl chloride resin intermediate layer, iv) polyvinyl chloride substrate layer, and v) adhesive layer is from 1 to 1.5 mm.

15 17. A decorative floor covering in accordance with claim 12, wherein the adhesive layer of v) is a sheet in which urethane resin, acrylic resin or vinylacetate resin is rolled to a thickness of 0.03 to 0.2 mm using 4 calender rolls at a temperature of 80 to 160  $^{\circ}\text{C}$ , an impregnated sheet, or a plastisol coating gel.

20 18. A method for manufacturing a decorative floor covering comprising a surface layer downwardly comprising a surface treated layer, a polyethylene terephthalate film layer, and a polyvinyl chloride resin intermediate layer, and a polyvinyl chloride resin substrate layer comprising

the steps of:

- a) manufacturing a polyvinyl chloride resin substrate layer;
- b) manufacturing a pressed sheet by laying up a polyvinyl chloride resin intermediate layer on the substrate layer of step a), applying pressure, and pressing;
- c) manufacturing a half-finished sheet by laying up a polyethylene terephthalate film layer under which a certain pattern is printed on the pressed sheet of step b), applying pressure, and pressing; and
- d) forming a surface treated layer by coating a surface treated layer composition on the half-finished sheet of step c) and UV (ultraviolet ray) curing.

19. A method for manufacturing a decorative floor covering in accordance with claim 18, wherein the pressing of step b) is carried out after preheating a substrate layer to a temperature of 140 to 170 °C before laying up a polyvinyl chloride resin intermediate layer.

20. A method for manufacturing a decorative floor covering in accordance with claim 18, wherein the pressing of step c) is carried out after preheating a pressed sheet to a temperature of 140 to 170 °C before laying up a polyethylene terephthalate film layer 24.

21. A method for manufacturing a decorative floor covering in accordance with claim 18, wherein the polyethylene terephthalate film layer of step c) is a film in which a primer selected from the group consisting of polyvinyl acetate based, polyurethane acrylate based, and ethylenevinyl acetate based primers is coated to a film thickness of 0.1 to 10  $\mu\text{m}$  on top

and bottom sides of the polyethylene terephthalate film layer.

22. A method for manufacturing a decorative floor covering in accordance with claim 18, wherein the polyethylene terephthalate film layer of step c) has a thickness of 10 to 100  $\mu\text{m}$ .

5 23. A method for manufacturing a decorative floor covering in accordance with claim 18, wherein the polyvinyl chloride resin substrate layer of step a) is manufactured by kneading a polyvinyl chloride resin composition comprising 100 weight parts of polyvinyl chloride resin, 50 to 400 weight parts of one or more inorganic fillers selected from the group consisting of  
10 calcium carbonate, talc, wollastonite, and silica, or 5 to 30 weight parts of one or more metallic powders selected from the group consisting of aluminum, copper, and iron as fillers in a rolling mill of 160 to 190  $^{\circ}\text{C}$ , and rolling to a thickness of 0.8 to 1.3 mm.

24. A method for manufacturing a decorative floor covering  
15 comprising a surface layer downwardly comprising a surface treated layer, a polyethylene terephthalate film layer, and a polyvinyl chloride resin intermediate layer, a polyvinyl chloride resin substrate layer, and a light back layer comprising the steps of:

- a) manufacturing the first polyvinyl chloride resin substrate layer;
- 20 b) pressing while applying pressure in an embossing roll after positioning a glass fiber scrim, or a woven or unwoven glass fiber underneath the first substrate layer 10 under the condition that a surface of the first polyvinyl chloride resin substrate layer 10 of step a) maintains latent heat of 100 to 150  $^{\circ}\text{C}$ ;

- 5 c) manufacturing the second polyvinyl chloride resin substrate layer;  
d) coating a plastisol underneath the second polyvinyl chloride resin  
substrate layer, positioning a light back layer of a fiber layer,  
applying pressure, and pressing with a press roll at a heating drum  
at 140 to 150 °C;
- 10 e) manufacturing a polyvinyl chloride resin intermediate layer;  
f) manufacturing a pressed sheet by applying pressure at a press  
after downwardly positioning a polyvinyl chloride resin intermediate  
layer, the first polyvinyl chloride resin substrate layer under which  
glass fiber scrim, or woven or unwoven glass fiber is pressed, the  
second polyvinyl chloride resin substrate layer under which a light  
back layer of a fiber layer is pressed, and preheating to a  
temperature of 140 to 170 °C;
- 15 g) manufacturing a half-finished sheet by applying pressure and  
pressing at an embossing roll after preheating the pressed sheet of  
step f) to a temperature of 140 to 170 °C and positioning a  
polyethylene terephthalate film layer on a polyvinyl chloride resin  
intermediate layer; and
- 20 h) forming a surface treated layer by UV (ultraviolet rays) curing after  
coating a surface treated layer composition on the half-finished  
sheet of step g).

25. A method for manufacturing a decorative floor covering in  
accordance with claim 24, wherein the polyethylene terephthalate film layer  
of step g) is a film in which a primer selected from the group consisting of

polyvinyl acetate based, polyurethane acrylate based, and ethylenevinyl acetate based primers is coated to a film thickness of 0.1 to 10  $\mu\text{m}$  on top and bottom sides of the polyethylene terephthalate film layer.

26. A method for manufacturing a decorative floor covering in accordance with claim 24, wherein the polyethylene terephthalate film layer of step g) has a thickness of 10 to 100  $\mu\text{m}$ .

27. A method for manufacturing a decorative floor covering in accordance with claim 24, wherein the first polyvinyl chloride resin substrate layer 10 of step a) and the second polyvinyl chloride resin substrate layer of step c) are manufactured by kneading a polyvinyl chloride resin composition comprising 100 weight parts of polyvinyl chloride resin, 50 to 400 weight parts of one or more inorganic fillers selected from the group consisting of calcium carbonate, talc, wollastonite, and silica, or 5 to 30 weight parts of one or more metallic powders selected from the group consisting of aluminum, copper, and iron as fillers in a rolling mill at 160 to 190  $^{\circ}\text{C}$ , and rolling to a thickness of 0.8 to 1.3 mm.

28. A method for manufacturing a decorative floor covering comprising a surface layer downwardly comprising a surface treated layer, a polyethylene terephthalate film layer, and a polyvinyl chloride resin intermediate layer, a polyvinyl chloride resin substrate layer, and a light back layer comprising the steps of:

- a) manufacturing a polyvinyl chloride resin substrate layer;
- b) laying up a polyvinyl chloride resin intermediate layer on the preheated substrate layer of step a), applying pressure, and



pressing;

c) manufacturing a half-finished sheet by laying up a polyethylene terephthalate film layer on the preheated polyvinyl chloride resin intermediate layer of step b), applying pressure, and pressing;

5 d) laying up an adhesive layer underneath the preheated half-finished sheet of step c), applying pressure, and pressing;

e) laying up a light back layer underneath the adhesive layer of step d), applying pressure, and pressing; and

10 f) forming a surface treated layer after coating a surface treated layer composition on the pressed polyethylene terephthalate film layer of step e), and curing.

29. A method for manufacturing a decorative floor covering in accordance with claim 28, wherein the laying up and pressing of the light back layer is laying up and pressing a fabric layer underneath a wooden powder balance layer after laying up and pressing a cork balance layer underneath an adhesive layer, or laying up and pressing a wooden powder balance layer underneath an adhesive layer.

30. A method for manufacturing a decorative floor covering in accordance with claim 28, wherein the polyethylene terephthalate film layer of step c) is a film in which a primer selected from the group consisting of polyvinyl acetate based, polyurethane acrylate based, and ethylenevinyl acetate based primers is coated to a film thickness of 0.1 to 10  $\mu\text{m}$  on top and bottom sides of the polyethylene terephthalate film layer.

31. A method for manufacturing a decorative floor covering in

accordance with claim 28, wherein the polyethylene terephthalate film layer of step c) has a thickness of 10 to 100  $\mu\text{m}$ .

32. A method for manufacturing a decorative floor covering in accordance with claim 28, wherein the polyvinyl chloride resin substrate layer of step a) is manufactured by kneading a polyvinyl chloride resin composition comprising 100 weight parts of polyvinyl chloride resin, 50 to 400 weight parts of one or more inorganic fillers selected from the group consisting of calcium carbonate, talc, wollastonite, and silica, or 5 to 30 weight parts of one or more metallic powders selected from the group consisting of aluminum, copper, and iron as fillers in a rolling mill of 160 to 190  $^{\circ}\text{C}$ , and rolling to a thickness of 0.8 to 1.3 mm.

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